readings and result in the unnecessary replacement of a component.

Amperage

Amperage is the unit of measure for the amount of current within a circuit. Current is the actual flow of electricity. The higher the current, the more work that can be performed. However, if the current flow exceeds the circuit or component capacity, the system will be damaged.

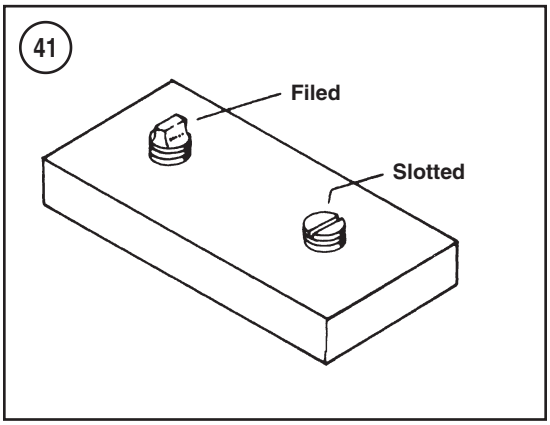
Electrical Tests

Refer to Chapter Nine for a description of various electrical tests.

BASIC SERVICE METHODS

Most of the procedures in this manual are straightforward and can be performed by anyone reasonably competent with tools. However, consider personal capabilities carefully before attempting any operation involving major disassembly.

1. Front, in this manual, refers to the front of the ATV. The front of any component is the end closest to the front of the ATV. The left and right sides refer to the position of the parts as viewed by the rider sitting on the seat facing forward. For example, the throttle control is on the right side of the handlebar.
2. Whenever servicing an engine or suspension component, secure the ATV in a safe manner.
3. Tag all similar parts for location, and mark all mated parts for position. Record the number and thickness of any shims as they are removed. Identify parts by placing them in sealed and labeled plastic bags.
4. Tag disconnected wires and connectors with masking tape and a marking pen. Do not rely on memory alone.
5. Protect finished surfaces from physical damage or corrosion. Keep gasoline and other chemicals off painted surfaces.
6. Use penetrating oil on frozen or tight bolts. Avoid using heat where possible. Heat can warp, melt or affect the temper of parts. Heat also damages the finish of paint and plastics.



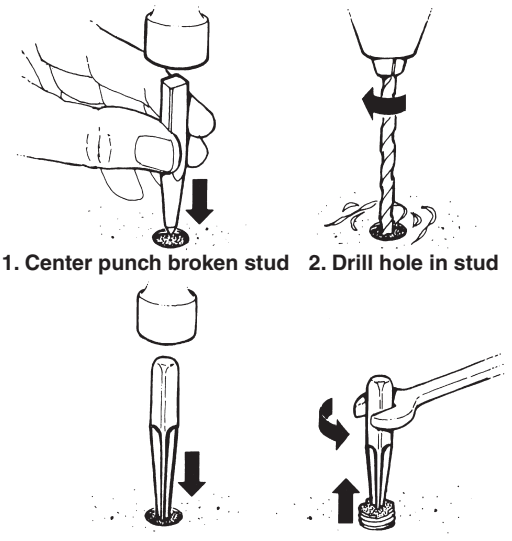
7. When a part is a press fit or requires a special tool for removal, the information or type of tool is identified in the text. Otherwise, if a part is difficult to remove or install, determine the cause before proceeding.
8. To prevent objects or debris from falling into the engine, cover all openings.
9. Read each procedure thoroughly and compare the illustrations to the actual components before starting the procedure. Perform each procedure in sequence.
10. Recommendations are occasionally made to refer service to a dealership or specialist. In these cases, the work can be performed more economically by the specialist than by the home mechanic.
11. The term *replace* means to discard a defective part and install a new part in its place. *Overhaul* means to remove, disassemble, inspect, measure, repair and/or replace parts as required to recondition an assembly.
12. Some operations require the use of a hydraulic press. If a press is not available, have these operations performed by a shop equipped with the necessary equipment. Do not use makeshift equipment that may damage the ATV.
13. Repairs are much faster and easier if the ATV is clean before starting work. Degrease the ATV with a commercial degreaser; follow the directions on the container for the best results. Clean all parts with cleaning solvent as they are removed.

CAUTION

Do not apply a chemical degreaser to an O-ring drive chain. These chemicals will damage the O-rings.

42

REMOVING BROKEN SCREWS AND BOLTS



Use kerosene to clean O-ring type chains.

CAUTION
Do not direct high-pressure water at steering bearings, carburetor hoses, wheel bearings, suspension and electrical components, or O-ring drive chains. The water will force the grease out of the bearings and possibly damage the seals.

14. If special tools are required, have them available before starting a procedure. When special tools are required, they will be described at the beginning of the procedure.

15. Make diagrams of similar-appearing parts. For instance, crankcase bolts are often not the same lengths. Do not rely on memory alone. It is possible that carefully laid out parts will become disturbed, making it difficult to reassemble the components correctly without a diagram.

16. Make sure all shims and washers are reinstalled in the same location and position.

17. Whenever a rotating part contacts a stationary part, look for a shim or washer.

18. Use new gaskets if there is any doubt about the condition of old ones.

19. If self-locking fasteners are used, replace them with new ones. Do not reuse a self-locking fastener. Also, do not install standard fasteners in place of self-locking ones.

20. Use grease to hold small parts in place if they tend to fall out during assembly. However, do not apply grease to electrical or brake components.

Removing Frozen Fasteners

If a fastener cannot be removed, several methods may be used to loosen it. First, apply penetrating oil such as Liquid Wrench or WD-40. Apply it liberally, and let it penetrate for 10-15 minutes. Rap the fastener several times with a small hammer. Do not hit it hard enough to cause damage. Reapply the penetrating oil if necessary.

For frozen screws, apply penetrating oil as described. Insert a screwdriver in the slot, and rap the top of the screwdriver with a hammer. This loosens the rust so the screw can be removed in the normal way. If the screw head is too damaged to use this method, grip the head with locking pliers and twist the screw out.

Avoid applying heat unless specifically instructed, as it may melt, warp or remove the temper from parts. Use a heat gun, if available.

Removing Broken Fasteners

If the head breaks off a screw or bolt, several methods are available for removing the remaining portion. If a large portion of the remainder projects out, try gripping it with locking pliers. If the projecting portion is too small, file it to fit a wrench or cut a slot in it to fit a screwdriver (**Figure 41**).

If the head breaks off flush, use a screw extractor. To do this, centerpunch the exact center of the remaining portion of the screw or bolt. Drill a small hole in the screw and tap the extractor into the hole. Back the screw out with a wrench on the extractor (**Figure 42**).

Repairing Damaged Threads

Occasionally, threads are stripped through carelessness or impact damage. Often the threads can be repaired by running a tap (for internal threads on nuts) or die (for external threads on bolts) through the threads (**Figure 43**). To clean or repair spark plug threads, use a spark plug tap.

If an internal thread is damaged, it may be necessary to install a Helicoil or some other type of thread insert. Follow the manufacturer's instructions when installing their insert.

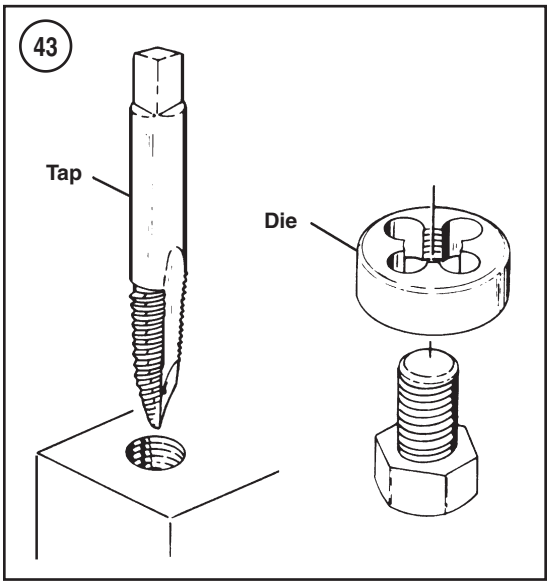
Stud Removal/Installation

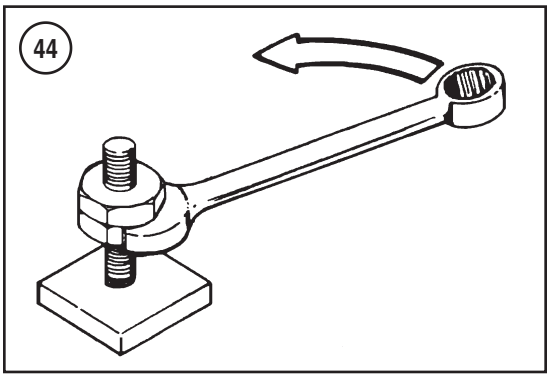
A stud removal tool is available from most tool suppliers. This tool makes the removal and installation of studs easier. If one is not available, thread two nuts onto the stud and tighten them against each other. Remove the stud by turning the lower nut (**Figure 44**).

1. Measure the height of the stud above the surface.
2. Thread the stud removal tool onto the stud and tighten it, or thread two nuts onto the stud.
3. Remove the stud by turning the stud remover or the lower nut.
4. Remove any threadlocking compound from the threaded hole. Clean the threads with an aerosol parts cleaner.
5. Install the stud removal tool onto the new stud or thread two nuts onto the stud.
6. Apply threadlocking compound to the threads of the stud.
7. Install the stud and tighten it with the stud removal tool or the top nut.
8. Install the stud to the height noted in Step 1, the height specified in the text or its torque specification.
9. Remove the stud removal tool or the two nuts.

Removing Hoses

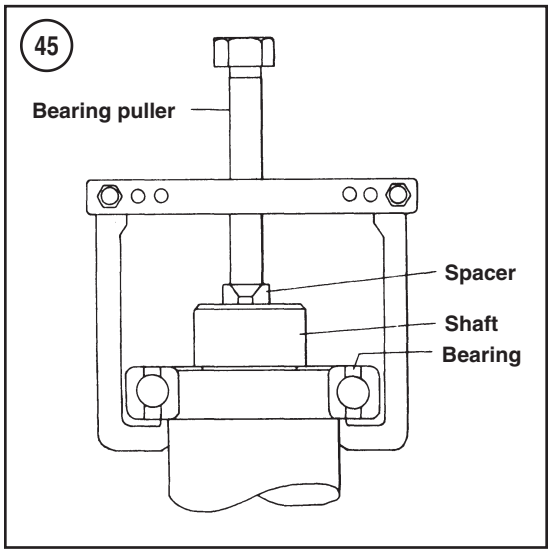
When removing stubborn hoses, do not exert excessive force on the hose or fitting. Remove the hose clamp and carefully insert a small screwdriver or pick tool between the fitting and hose. Apply a spray lubricant under the hose and carefully twist the hose off the fitting. Use a wire brush to clean any corrosion or rubber hose material from the fitting. Clean the inside of the hose thoroughly. Never use any lubricant when installing the hose (new or old). The lubricant may allow the hose to come off the fitting, even with the clamp secure.

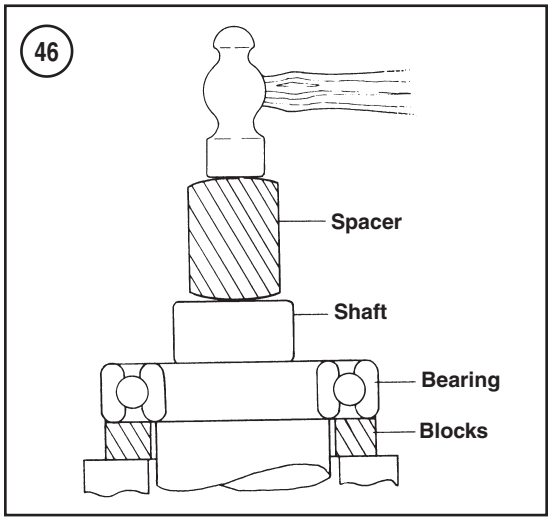




Bearings

Bearings are used in the engine and transmission assembly to reduce power loss, heat and noise resulting from friction. Because bearings are precision parts, they must be maintained by proper lubrication and maintenance. If a bearing is damaged, replace it immediately. When installing a new bearing, take care to prevent damaging it. Bearing replacement procedures are included in the individual chapters where applicable; however, use the following sections as a guideline.



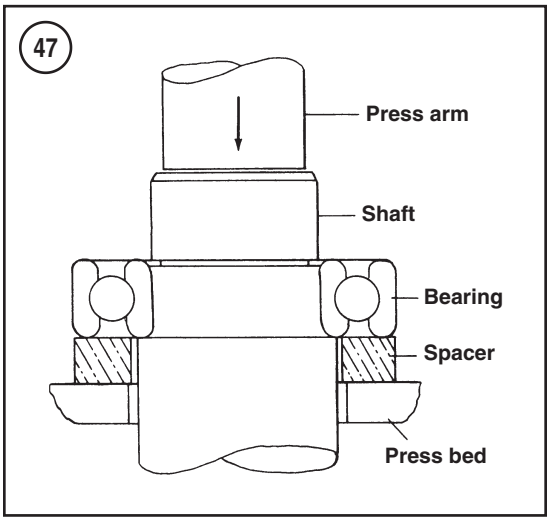


NOTE
Unless otherwise specified, install bearings with the manufacturer's mark or number facing outward.

Removal

While bearings are normally removed only when damaged, there may be times when it is necessary to remove a bearing that is in good condition. However, improper bearing removal will damage the bearing and maybe the shaft or case half. Note the following when removing bearings.

1. Before removing the bearings, note the following:



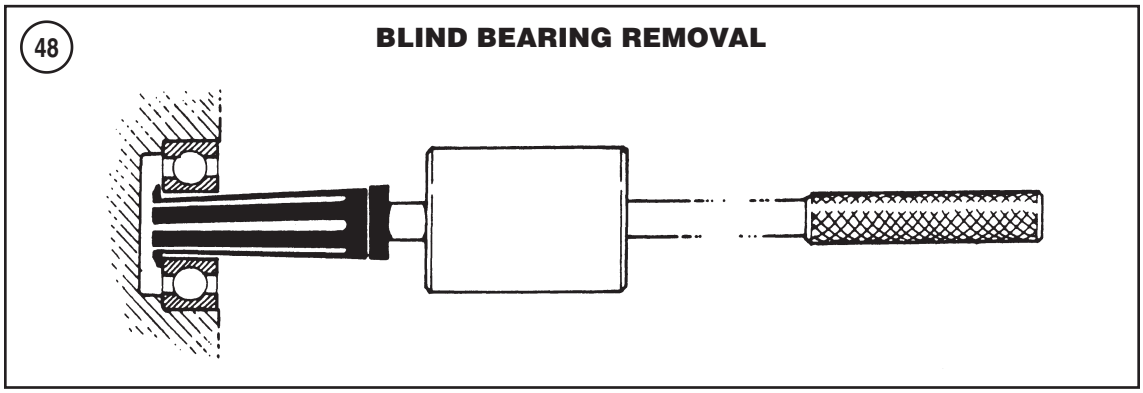
a. Refer to the bearing replacement procedure in the appropriate chapter for any special instructions.
b. Remove any seals that interfere with bearing removal. Refer to *Seal Replacement* in this section.
c. When removing more than one bearing, identify the bearings before removing them. Refer to the bearing manufacturer's numbers on the bearing.
d. Note and record the direction in which the bearing numbers face for proper installation.
e. Remove any set plates or bearing retainers before removing the bearings.

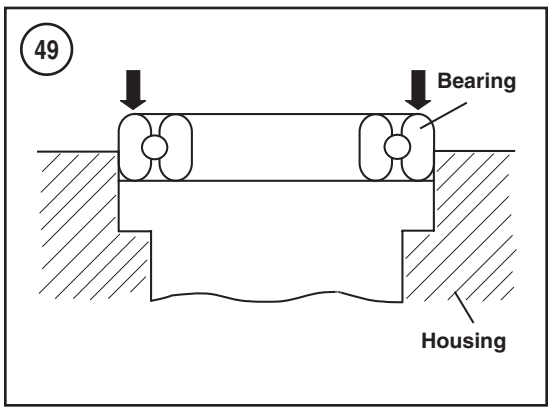
2. When using a puller to remove a bearing from a shaft, take care that the shaft is not damaged. Always place a piece of metal between the end of the shaft and the puller screw. In addition, place the puller arms next to the inner bearing race. See **Figure 45**.

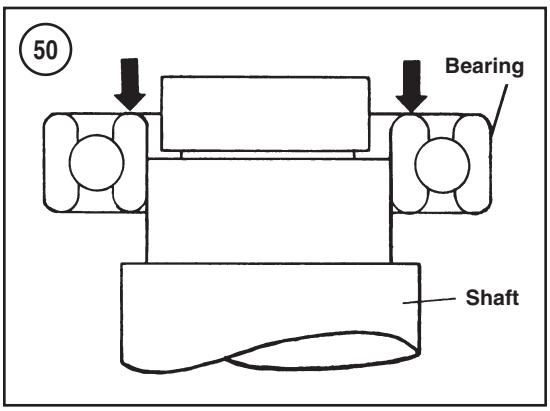
3. When using a hammer to remove a bearing from a shaft, do not strike the hammer directly against the shaft. Instead, use a brass or aluminum spacer between the hammer and shaft (**Figure 46**) and make sure to support both bearing races with wooden blocks as shown.

4. The ideal method of bearing removal is with a hydraulic press. Note the following when using a press:

a. Always support the inner and outer bearing races with a suitable size wooden or aluminum spacer (**Figure 47**). If only the outer race is supported, pressure applied against







the balls and/or the inner race will damage them.

b. Always make sure the press arm (**Figure 47**) aligns with the center of the shaft. If the arm is not centered, it may damage the bearing and/or shaft.

c. The moment the shaft is free of the bearing, it will drop to the floor. Secure or hold the shaft to prevent it from falling.

d. When removing bearings from a housing, support the housing with 4 × 4 in. wooden blocks to prevent damage to gasket surfaces.

5. Use a blind bearing puller to remove bearings installed in blind holes (**Figure 48**).

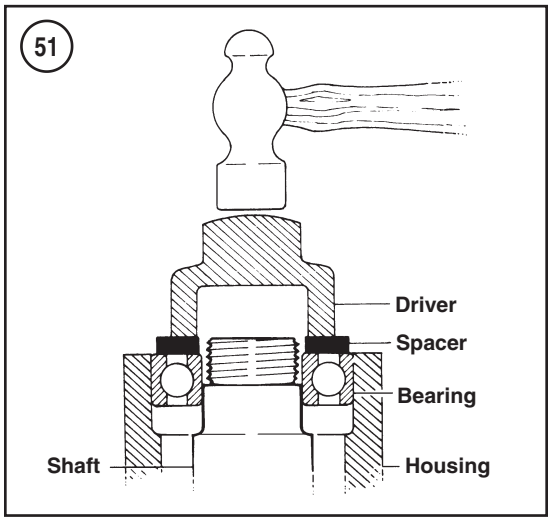
6. When it is impossible to fit a blind bearing puller onto a bearing, first heat the case evenly with a heat gun. Then place the case on a wooden surface (bearing side down) and tap the housing from its opposite side with a plastic or rubber hammer to remove the bearing.

Installation

1. When installing a bearing into a housing, apply pressure to the *outer* bearing race (**Figure 49**). When installing a bearing onto a shaft, apply pressure to the *inner* bearing race (**Figure 50**).

2. When installing a bearing as described in Step 1, some type of driver is required. Never strike the bearing directly with a hammer or the bearing will be damaged. When installing a bearing, use a piece of pipe or a driver with a diameter that matches the bearing race. **Figure 50** shows the correct way to use a driver and hammer to install a bearing onto a shaft.

3. Step 1 describes how to install a bearing in a case half or over a shaft. However, when installing a bearing over a shaft and into a housing at the same time, a tight fit is required for both outer and inner bearing races. In this situation, install a spacer underneath the driver tool so that pressure is applied evenly across both races (**Figure 51**). If both races are not driven evenly during this procedure, the



balls in the bearing will damage both bearing races when the races are forced out of alignment.

Interference fit

1. Follow this procedure when installing a bearing over a shaft. When a tight fit is required, the bearing inside diameter will be smaller than the shaft. In this case, driving the bearing onto the shaft using normal methods may cause bearing damage. Instead, heat the bearing before installation. Note the following:
   a. Refer to the bearing replacement procedure in the appropriate chapter for any special instructions.
   b. Secure the shaft so it is ready for bearing installation.
   c. Clean all residues from the bearing surface of the shaft. Remove burrs with a file or sandpaper.
   d. Fill a suitable pot or beaker with clean mineral oil. Place a thermometer rated above 120° C (248° F) in the oil. Support the thermometer so it does not rest on the bottom or side of the pot.
   e. Remove the bearing from its wrapper and secure it with a piece of heavy wire bent to hold it in the pot. Hang the bearing in the pot so it does not touch the bottom or sides of the pot.
   f. Turn the heat on and monitor the thermometer. When the oil temperature rises to approximately 120° C (248° F), remove the bearing from the pot and quickly install it. If necessary, place a socket on the inner bearing race and tap the bearing into place. As the bearing chills, it will tighten on the shaft, so installation must be done quickly. Make sure the bearing is installed completely.

2. Follow this step when installing a bearing in a housing. Bearings are generally installed in a housing with a slight interference fit. Driving the bearing into the housing using normal methods may damage the housing or cause bearing damage. Instead, chill the bearing(s) and heat the housing before the bearing is installed. Note the following:

CAUTION

Before heating the housing in this procedure, wash the housing thoroughly with detergent and water. Rinse and rewash the cases as required to remove all traces of oil and other chemical deposits.

   a. Refer to the bearing replacement procedure in the appropriate chapter for any special instructions.
   b. Before heating the bearing housing, place the new bearing(s) in a freezer. Chilling a bearing slightly reduces its outside diameter, while the heated bearing housing assembly is slightly larger due to heat expansion. This will make bearing installation easier.
   c. Heat the housing to approximately 100° C (212° F) in an oven or on a hot plate. To accurately monitor the temperature, use temperature sticks available at welding supply stores. Heat only one housing at a time.

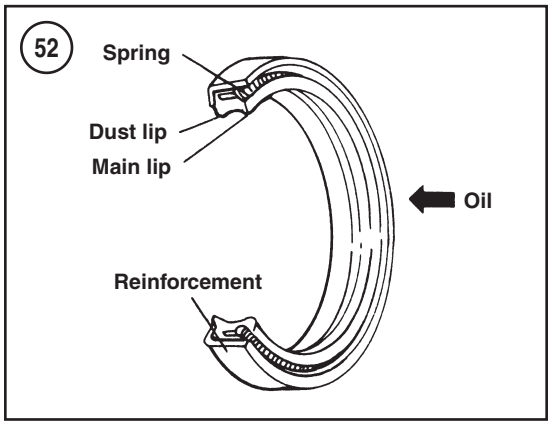
CAUTION

Do not heat the housing with a propane or acetylene torch. Never bring a flame into contact with the bearing or housing. The direct heat will destroy the case hardening of the bearing and will likely warp the housing.

   d. Remove the housing from the oven or hot plate, and hold onto the housing with heavy gloves.

NOTE

Always install bearings with the manufacturer's mark or number facing outward unless specifically directed not to.

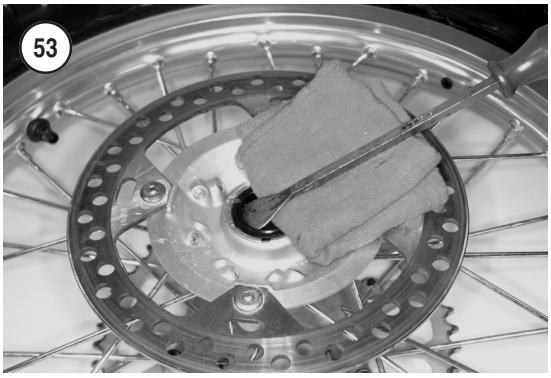


e. While the housing is still hot, install the new bearing(s) into the housing. Install the bearings by hand, if possible. If necessary, lightly tap the bearing(s) into the housing with a socket placed on the outer bearing race (**Figure 49**). Do not install new bearings by driving on the inner-bearing race. Install the bearing(s) until it seats completely.

Seal Replacement

Seals (**Figure 52**) are used to contain oil, water, grease or combustion gasses in a housing or shaft. Improper removal of a seal can damage the housing or shaft. Improper installation of the seal can damage the seal and cause leakage. Note the following:

1. Refer to the seal replacement procedure in the appropriate chapter for any special instructions.
2. Prying is generally the easiest and most effective method for removing a seal from a housing. Note the following:
   a. Record the depth or installed position to which the seal is installed.
   b. When using a screwdriver to remove a seal, place a rag underneath the screwdriver (**Figure 53**) to avoid damaging the housing.
   c. If a seal is hard to remove, do not damage the seal by using a screwdriver or similar tool. Use a seal removal tool.



3. Pack the specified grease in the seal lips before the seal is installed. If no grease is specified, use waterproof grease. If the new seal is pre-greased, do not add additional grease.
4. While seals are usually installed with the manufacturer's numbers or marks facing out, this is not always the case. In situations where double-sided seals are used, record the side of the seal that faces out. When two seals are installed back-to-back, record the side of each seal that faces out.
5. Install seals with a socket or bearing driver placed on the outer circumference of the seal as shown in **Figure 54**. Drive the seal squarely into the housing. Never install a seal by hammering on the outer side of the seal. Install the seal to its proper depth.

Table 1 ENGINE AND FRAME SERIAL NUMBERS

Model	Engine starting serial number	Frame starting serial number
2000		
TRX350FE	TE25E-8000001~	478TE254 YA000001~
TRX350FM	TE25E-8000001~	478TE250 YA000001~
TRX350TE	TE24E-8000001~	478TE244 YA000001~
TRX350TM	TE24E-8000001~	478TE240 YA000001~
2001		
TRX350FE	TE25E-8000001~	478TE254 1A100001~
	TE25E-8000001~	478TE254 14000001~
TRX350FM	TE25E-8000001~	478TE250 1A100001~
	TE25E-8000001~	478TE250 14000001~
TRX350TE	TE24E-8000001~	478TE244 1A100001~
TRX350TM	TE24E-8000001~	478TE240 1A100001~
2002		
TRX350FE	TE25E-8500001~	478TE254 2A200001~
	TE25E-8500001~	478TE254 24100001~
TRX350FM	TE25E-8500001~	478TE250 2A200001~
	TE25E-8500001~	478TE250 24100001~
TRX350TE	TE25E-8500001~	478TE254 2A200001~
	TE24E-8500001~	478TE244 24100001~
TRX350TM	TE24E-8500001~	478TE240 2A200001~
	TE24E-8500001~	478TE240 24100001~
2003		
TRX350FE	TE25E-8500001~	478TE254 3A300001~
	TE25E-8600001~	478TE254 34200001~
TRX350FM	TE25E-8500001~	478TE250 3A300001~
	TE25E-8600001~	478TE250 34200001~
TRX350TE	TE25E-8500001~	478TE244 3A300001~
	TE24E-8600001~	478TE244 34200001~
TRX350TM	TE24E-8500001~	478TE240 3A300001~
	TE24E-8600001~	478TE240 34200001~
2004-2006	Not available	Not available

Table 2 GENERAL DIMENSIONS

	mm	in.
Overall width		
2000-2003	1143	45.0
2004-on TE/TM	1114	43.9
2004-on FE/FM	1114	43.9
Overall length		
2000-2003	1983	78.1
2004-on TE/TM	2031	80.0
2004-on FE/FM	2031	80.0
Overall height		
2000-2003 FE/FM	1130	44.5
2000-2003 TE/TM	1119	44.1
2004-on FE/FM	1141	44.9
2004-on TE/TM	1129	44.4

(continued)

Table 2 GENERAL DIMENSIONS

	mm	in.
Wheelbase		
2000-2003 FE/FM	1246	49.1
2000-2003 TE/TM	1253	49.3
2004-on FE/FM	1246	49.1
2004-on TE/TM	1253	49.3
Front tread		
2000-2003 FE/FM	844	33.2
2000-2003 TE/TM	851	33.5
2004-on FE/FM	844	33.2
2004-on TE/TM	851	33.5
Rear tread		
2000-2003 FE/FM	860	33.9
2000-2003 TE/TM	840	33.1
2004-on FE/FM	860	33.9
2004-on TE/TM	840	33.1
Seat height		
2000-2003 FE/FM	824	32.4
2000-2003 TE/TM	812	32.0
2004-on FE/FM	819	32.3
2004-on TE/TM	812	32.0
Footpeg height		
2000-2003 FE	330	13.0
2000-2003 FM	334	13.1
2000-2003 TE	318	12.5
2000-2003 TM	323	12.7
2004-on FM	344	13.5
2004-on FE	334	13.1
2004-on TM	337	13.3
2004-on TE	327	12.9
Ground clearance		
2000-2003 FE/FM	184	7.2
2000-2003 TE/TM	186	7.3
2004-on	186	7.3

Table 3 WEIGHT SPECIFICATIONS

	kg	lb.
Dry weight		
TRX350FE		
2000-2001	242.5	534.6
2002-2003	243	536
2004-on	241	531
TRX350FM		
2000-2001	237.5	523.6
2002-2003	238	525
2004-on	238	525
TRX350TE		
2000-2001	232	511
2002-2003	232.5	512.6
2004-on	232	511
TRX350TM		
2000-2001	226	498
2002-2003	226.5	499.3
2004-on	227	500

(continued)

Table 3 WEIGHT SPECIFICATIONS (continued)

	kg	lb.
Curb weight		
TRX350FE		
2000-2001	253.5	558.9
2002-2003	254	560
2004-on	252	556
TRX350FM		
2000-2001	248.5	547.8
2002-2003	249	549
2004-on	249	549
TRX350TE		
2000-2001	243	536
2002-2003	243.5	536.8
2004-on	242	534
TRX350TM		
2000-2001	237	522
2002-2003	237.5	522
2004-on	238	525

Table 4 METRIC, INCH AND FRACTIONAL EQUIVALENTS

mm	in.	Nearest fraction	mm	in.	Nearest fraction
1	0.0394	1/32	26	1.0236	1 1/32
2	0.0787	3/32	27	1.0630	1 1/16
3	0.1181	1/8	28	1.1024	1 3/32
4	0.1575	5/32	29	1.1417	1 5/32
5	0.1969	3/16	30	1.1811	1 3/16
6	0.2362	1/4	31	1.2205	1 7/32
7	0.2756	9/32	32	1.2598	1 1/4
8	0.3150	5/16	33	1.2992	1 5/16
9	0.3543	11/32	34	1.3386	1 11/32
10	0.3937	13/32	35	1.3780	1 3/8
11	0.4331	7/16	36	1.4173	1 13/32
12	0.4724	15/32	37	1.4567	1 15/32
13	0.5118	1/2	38	1.4961	1 1/2
14	0.5512	9/16	39	1.5354	1 17/32
15	0.5906	19/32	40	1.5748	1 9/16
16	0.6299	5/8	41	1.6142	1 5/8
17	0.6693	21/32	42	1.6535	1 21/32
18	0.7087	23/32	43	1.6929	1 11/16
19	0.7480	3/4	44	1.7323	1 23/32
20	0.7874	25/32	45	1.7717	1 25/32
21	0.8268	13/16	46	1.8110	1 13/16
22	0.8661	7/8	47	1.8504	1 27/32
23	0.9055	29/32	48	1.8898	1 7/8
24	0.9449	15/16	49	1.9291	1 15/16
25	0.9843	31/32	50	1.9685	1 31/32

Table 5 GENERAL TORQUE SPECIFICATION

Fastener	N•m	in.-lb.	ft.-lb.
5 mm			
Bolt and nut	5	44	–
Screw	4	35	–
6 mm			
Bolt and nut	10	88	–
Small flange bolt (8 mm head)	10	88	–
Large flange bolt (8 mm head)	12	106	–
Large flange bolt (10 mm head)	12	106	–
Screw	9	80	–
8 mm			
Bolt and nut	22	–	16
Screw	26	–	19
10 mm			
Bolt and nut	34	–	25
Flange bolt	39	–	29
12 mm			
Bolt and nut	54	–	40

Table 6 CONVERSION FORMULAS

Multiply:	By:	To get the equivalent of:
Length		
Inches	25.4	Millimeter
Inches	2.54	Centimeter
Miles	1.609	Kilometer
Feet	0.3048	Meter
Millimeter	0.03937	Inches
Centimeter	0.3937	Inches
Kilometer	0.6214	Mile
Meter	0.0006214	Mile
Fluid volume		
U.S. quarts	0.9463	Liters
U.S. gallons	3.785	Liters
U.S. ounces	29.573529	Milliliters
Imperial gallons	4.54609	Liters
Imperial quarts	1.1365	Liters
Liters	0.2641721	U.S. gallons
Liters	1.0566882	U.S. quarts
Liters	33.814023	U.S. ounces
Liters	0.22	Imperial gallons
Liters	0.8799	Imperial quarts
Milliliters	0.033814	U.S. ounces
Milliliters	1.0	Cubic centimeters
Milliliters	0.001	Liters
Torque		
Foot-pounds	1.3558	Newton-meters
Foot-pounds	0.138255	Meters-kilograms
Inch-pounds	0.11299	Newton-meters
Newton-meters	0.7375622	Foot-pounds
Newton-meters	8.8507	Inch-pounds
Meters-kilograms	7.2330139	Foot-pounds
Volume		
Cubic inches	16.387064	Cubic centimeters
Cubic centimeters	0.0610237	Cubic inches

(continued)

Table 6 CONVERSION FORMULAS (continued)

Multiply:	By:	To get the equivalent of:
Temperature		
Fahrenheit	(°F − 32) × 0.556	Centigrade
Centigrade	(°C × 1.8) + 32	Fahrenheit
Weight		
Ounces	28.3495	Grams
Pounds	0.4535924	Kilograms
Grams	0.035274	Ounces
Kilograms	2.2046224	Pounds
Pressure		
Pounds per square inch	0.070307	Kilograms per square centimeter
Kilograms per square centimeter	14.223343	Pounds per square inch
Kilopascals	0.1450	Pounds per square inch
Pounds per square inch	6.895	Kilopascals
Speed		
Miles per hour	1.609344	Kilometers per hour
Kilometers per hour	0.6213712	Miles per hour

Table 7 TECHNICAL ABBREVIATIONS

ABDC	After bottom dead center
ATDC	After top dead center
BBDC	Before bottom dead center
BDC	Bottom dead center
BTDC	Before top dead center
C	Celsius (centigrade)
cc	Cubic centimeters
cid	Cubic inch displacement
CDI	Capacitor discharge ignition
cu. in.	Cubic inches
ESP	Electric Shift Program
F	Fahrenheit
ft.	Feet
ft.-lb.	Foot-pounds
gal.	Gallons
H/A	High altitude
hp	Horsepower
in.	Inches
in.-lb.	Inch-pounds
I.D.	Inside diameter
kg	Kilograms
kgm	Kilogram meters
km	Kilometer
kPa	Kilopascals
L	Liter
m	Meter
MAG	Magneto
ml	Milliliter
mm	Millimeter
N•m	Newton-meters
O.D.	Outside diameter
oz.	Ounces
psi	Pounds per square inch
PTO	Power take off
pt.	Pint
qt.	Quart
rpm	Revolutions per minute
SE	Starting enrichment